COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

STATIONARY SOURCE PERMIT TO CONSTRUCT AND OPERATE

This permit includes designated equipment subject to New Source Performance Standards (NSPS)

This permit supersedes your permit dated June 6, 2014, as amended April 6, 2015.

In compliance with the Federal Clean Air Act and the Commonwealth of Virginia Regulations for the Control and Abatement of Air Pollution,

Columbia Gas Transmission, LLC
1700 MacCorkle Avenue SE
Charleston, West Virginia 25314
Registration No.: 81286

is authorized to construct and operate

a natural gas compressor station

located at

367 Radio Station Road
Strasburg, Virginia

in accordance with the Conditions of this permit.

Approved on ***DRAFT***

Deputy Regional Director, Valley Region

Permit consists of 23 pages
Permit Conditions 1 to 69
Attachment A – Turbines' (E03, E04, E05, and E06) Short-Term Emission Limits in Non-Standard Operating Modes
Attachment B –Turbine (E03 - premodification) Short-Term Emission Limits in Non-Standard Operating Modes
Source Testing Report Format, 1 page

INTRODUCTION

This permit approval is based on the permit applications dated:

Application Signature Date	Application Amendment Date	Application Additional Information Received Date
12/17/15	--	8/12/16, 6/24/16, 6/16/16, 4/13/16, 3/17/16, 3/14/16, 3/8/16, 2/29/16
2/9/15	--	2/10/15
3/20/14	--	4/15/14, 4/22/14, 4/24/14, 4/28/14, 5/20/14
3/30/12	--	7/11/12
3/31/10	--	4/12/10, 5/3/10, 5/21/10, 5/26/10
9/27/96	11/12/96, 1/9/97, 5/13/98, 6/18/98	--

Any changes in the permit application specifications or any existing facilities which alter the impact of the facility on air quality may require a permit. Failure to obtain such a permit prior to construction may result in enforcement action. In addition, this facility may be subject to additional applicable requirements not listed in this permit.

Words or terms used in this permit shall have meanings as provided in 9 VAC 5-10-20 of the State Air Pollution Control Board Regulations for the Control and Abatement of Air Pollution. The regulatory reference or authority for each condition is listed in parentheses () after each condition.

Annual requirements to fulfill legal obligations to maintain current stationary source emissions data will necessitate a prompt response by the permittee to requests by the DEQ or the Board for information to include, as appropriate: process and production data; changes in control equipment; and operating schedules. Such requests for information from the DEQ will either be in writing**,** or by personal contact.

The availability of information submitted to the DEQ or the Board will be governed by applicable provisions of the Freedom of Information Act, §§ 2.2-3700 through 2.2-3714 of the Code of Virginia, § 10.1-1314 (addressing information provided to the Board) of the Code of Virginia, and 9 VAC 5-170-60 of the State Air Pollution Control Board Regulations. Information provided to federal officials is subject to appropriate federal law and regulations governing confidentiality of such information.

Equipment List – Equipment at this facility consists of the following:

Equipment to be Constructed			
Reference No.	**Equipment Description**	**Site-Rated Capacity**	**Federal Requirements**
E04	Solar Taurus 70 Turbine (natural gas-fired)	90.74 MMBtu/hr* at 32 degrees F	40 CFR 60, Subpart KKKK (NSPS)
E05	Solar Taurus 70 Turbine (natural gas-fired)	90.74 MMBtu/hr* at 32 degrees F	40 CFR 60, Subpart KKKK (NSPS)
E06	Solar MARS 100 Turbine (natural gas-fired)	133.0 MMBtu/hr* at 32 degrees F	40 CFR 60, Subpart KKKK (NSPS)
G3	Waukesha VGF-L36GL Emergency Generator (natural gas-fired)	880 brake horsepower (bhp)	--

* - Based on higher heating value (HHV)

Equipment to be Modified			
Reference No.	**Equipment Description**	**Site-Rated Capacity**	**Federal Requirements**
E03	Solar Titan 130 Turbine (natural gas-fired)	161.1 MMBtu/hr* at 32 degrees F	40 CFR 60, Subpart KKKK (NSPS)

* - Based on higher heating value (HHV)

Equipment Exempt from Permitting			
Reference No.	**Equipment Description**	**Rated Capacity**	**Exemption Citation**
H2	Fuel Gas Heater	0.30 MMBtu/hr	9 VAC 5-80-1105 B.1.a(4)
H3	Fuel Gas Heater	0.25 MMBtu/hr	9 VAC 5-80-1105 B.1.a(4)
H1	Fuel Gas Heater	1.5 MMBtu/hr	--
SH1	Catalytic Space Heaters (24)	0.072 MMBtu/hr each	--
Heaters 1 – 35 (SH2)	Natural Gas-Fired Catalytic Heaters	2 – 0.005 MMBtu/hr 33 – 0.072 MMBtu/hr	9 VAC 5-80-1105 B.1.a(4)
A01	Lube Oil Tank	--	--
A02	Used Oil Tank	--	--
A03 and A04	Pipeline Liquids Tanks	--	--

Equipment to be shut down upon operation of the new Turbines E04, E05, and E06.			
Unit No.	**Equipment Description**	**Site-Rated Capacity**	**Federal Requirements**
E01 and E02	2 EGT Tornado Turbines (natural gas-fired)	8,576 brake horsepower each	40 CFR 60, Subpart GG (NSPS)
G2	Waukesha VGF-H24GL Emergency Generator (natural gas-fired)	585 bhp	--
G1	Waukesha reciprocating engine/emergency generator (natural gas-fired)	260 horsepower	--
AC1	Wisconsin reciprocating engine/air compressor (natural gas-fired)	37 horsepower	--
BL1	Hydrotherm MR-1500-PBV Heating System Boiler (natural gas-fired)	2.1 MMBtu/hr	--

Specifications provided above are for informational purposes only, and do not form enforceable terms of conditions of the permit.

PROCESS REQUIREMENTS

1. **Emissions Testing** – The facility shall be constructed so as to allow for emissions testing upon reasonable notice at any time, using appropriate methods. Sampling ports, safe sampling platforms, and access shall be provided when requested.
   (9 VAC 5-50-30 F and 9 VAC 5-80-1180)

2. **Emissions Control –** Nitrogen Oxide (NO_x) emissions from the turbines (E03, E04, E05, and E06) shall be controlled by dry low NOx ($SoLoNO_x$) combustion control technology. The turbines shall be provided with adequate access for inspection. The SoLoNOx technology shall be in operation when the turbines are operating in normal operating mode (above 0 °F and greater than 50% load).
   (9 VAC 5-80-1180 and 9 VAC 5-50-260)

3. **Emission Controls –** Carbon Monoxide (CO) and Volatile Organic Compound (VOC) emissions from the turbines (E03, E04, E05, and E06) shall be controlled by the use of good combustion practices and proper operation and maintenance in accordance with the manufacturer's operating instructions, at a minimum.
   (9 VAC 5-80-1180 and 9 VAC 5-50-260)

4. **Emission Controls –** The permittee shall operate and maintain each stationary turbine, air pollution control equipment, and monitoring equipment in a manner consistent with good air pollution control practices for minimizing emissions at all times including during startup, shutdown, and malfunction.
   (9 VAC 5-50-410, 40 CFR Subpart 60.4333(a), and 40 CFR 60.11(d))

5. **VOC Work Practice Standards for Natural Gas Venting –** The permittee shall take reasonable precautions to minimize volatile organic compound emissions from the natural gas venting, which shall include the following, at a minimum:

   a. Proper operation and maintenance in accordance with the manufacturer's operating instructions.

   b. Install electric starters to reduce the volume of gas vented to the atmosphere during startup.

   c. Install electric seal gas booster pumps to maintain pressurized holds limiting the number of blowdowns and volume of gas vented to atmosphere following a shutdown.

   d. Coordinate maintenance activities to reduce the total number of blowdowns.

   (9 VAC 5-80-1180 and 9 VAC 5-50-260)

6. **Emissions Controls (G3)** – NO_x, CO, and VOC emissions from the emergency generator engine (G3) shall be controlled by proper engine operation in accordance with manufacturer written instructions or procedures developed by the permittee that are approved by the manufacturer, over the entire life of the engine. In addition, the permittee may only change those settings that are approved by the manufacturer in a manner consistent with good air pollution control practices for minimizing emissions.
   (9 VAC 5-80-1180 and 9 VAC 5-50-260)

OPERATING/EMISSION LIMITATIONS

7. **Fuel** – The approved fuel for the four turbines (E03, E04, E05, and E06), and emergency generator (G3) is pipeline natural gas. A change in the fuel shall be considered a change in the method of operation of the four turbines (E03, E04, E05, and E06), and emergency generator (G3), and may require a new or amended permit.
   (9 VAC 5-80-1180 and 9 VAC 5-50-260)

8. **Fuel** – The pipeline natural gas shall not exceed a sulfur content of 0.25 grains of sulfur per 100 standard cubic feet on a 12-month rolling average basis, and a sulfur content of 20 grains of sulfur per 100 standard cubic feet at any time.
   (9 VAC 5-80-1180)

9. **Fuel Monitoring** – The permittee shall use the fuel quality characteristics in a current, valid purchase contract, tariff sheet or transportation contract for the fuel, specifying that the maximum total sulfur content for the natural gas being fired at the natural gas compressor station facility is 20 grains of sulfur or less per 100 standard cubic feet, and has potential sulfur emissions of less than 0.060 lb SO_2/MMBtu heat input. A standard cubic foot is defined as a cubic foot of gas at standard conditions as specified in 40 CFR 72.2 (68° F and 29.92 inches Hg).
   (9 VAC 5-50-410 and 40 CFR 60 Subpart KKKK)

10. **Operating Hours (G3)** – The emergency generator engine (G3) shall not operate more than 500 hours per year, calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.
(9 VAC 5-80-1180 and 9 VAC 5-50-260)

11. **Monitoring Device (G3)** – The emergency generator engine (G3) shall be equipped with a non-resettable hour meter to continuously measure hours of operation. The monitoring device shall be installed, maintained, calibrated and operated in accordance with approved procedures which shall include, as a minimum, the manufacturer's written requirements or recommendations. The monitoring device shall be provided with adequate access for inspection and shall be in operation when the emergency generator engine (G3) is operating.
(9 VAC 5-80-1180)

12. **Emission Limits** – The permittee shall comply with the following 40 CFR 60 Subpart KKKK regulated pollutants (i.e. sulfur dioxide and nitrogen oxide per §60.4315) for each turbine (E03, E04, E05, and E06):

    a. Sulfur dioxide (SO_2): Fuel which contains total potential sulfur emissions in excess of 0.060 lb SO_2 / MMBtu heat input shall not be burned per §60.4330(a)(2). The total sulfur content of the fuel shall be monitored per §60.4360, except for the demonstration of the allowable fuel sulfur content through documentation or representative fuel sampling as provided in §60.4365.

    b. Nitrogen oxide (NOx): Combustion turbine (CT) firing natural gas: 25 ppm at 15 percent O_2 or 1.2 lb/MWh at operating loads of 75% or greater and 150 ppm at 15 percent O_2 or 8.7 lb/MWh at operating loads less than 75% of peak load or at temperatures less than 0 degrees F. (§60.4320).

    (9 VAC 5-80-1180, 9 VAC 5-50-260, 9 VAC 5-50-410, and 40 CFR 60 Subpart KKKK)

13. **Short-Term Emission Limits (E03)** – Short-term emissions from the normal operation of the turbine (E03) shall not exceed the limits specified below:

Nitrogen Oxides (as NO_2)*	15 ppmvd @ 15% O_2 9.2 lb/hr
Carbon Monoxide*	25 ppmvd @ 15% O_2 9.3 lb/hr
Volatile Organic Compounds*	5 ppmvd @ 15% O_2 1.1 lb/hr
PM(filterable)	0.3 lb/hr
PM_{10}	1.1 lb/hr

$PM_{2.5}$	1.1 lb/hr
Sulfur Dioxide	9.7 lb/hr

* Emission concentration limits for NO_x, CO, and VOC are applicable in Normal Load (maximum power rating of the turbine at ≥ 0° F). The emission rates in other operating modes, including Low Temperature mode from < 0° F to -20° F, Low Load operation (<50%), and Startup/Shutdown periods, are listed in Attachment A.

The permittee shall record the duration of each operational mode in order to calculate emissions, and shall operate the facility so as to minimize the frequency and duration of startup and shutdown events. Compliance with these emission limits may be determined as stated in Conditions 2, 3, 7, 8, 9, 25, and 27.
(9 VAC 5-80-1180 and 9 VAC 5-50-260)

14. **Annual Emissions Limits (E03)** – Annual emissions from the operation of the turbine (E03) shall not exceed the limits specified below:

Nitrogen Oxides (as NO_2)	38.9 tons/yr
Carbon Monoxide	86.0 tons/yr
Volatile Organic Compounds	5.0 tons/yr
PM (filterable)	1.3 tons/yr
PM_{10}	4.7 tons/yr
$PM_{2.5}$	4.7 tons/yr
Sulfur Dioxide	0.5 tons/yr

Annual emissions shall be calculated monthly as the sum of each consecutive 12-month period. Annual emissions shall include Normal Load and other operational modes (e.g. Low Temperature mode from < 0° F to -20° F, Low Load operation (<50%), and Startup/Shutdown periods). Exceedance of the operating limits may be considered credible evidence of the exceedance of emission limits. Compliance with these emission limits may be determined as stated in Conditions 2, 3, 7, 8, 9, and 23.
(9 VAC 5-20-260, 9 VAC 5-50-410, and 9 VAC 5-80-1180)

15. **Short-Term Emission Limits (E04 and E05)** – Short-term emissions from the normal operation of each of the turbines (E04 and E05) shall not exceed the limits specified below:

Nitrogen Oxides	15 ppmvd @ 15% O_2
(as NO_2)*****	5.1 lb/hr

Carbon Monoxide*	25 ppmvd @ 15% O_2 5.2 lb/hr
Volatile Organic Compounds*	5 ppmvd @ 15% O_2 0.6 lb/hr
PM(filterable)	0.2 lb/hr
PM_{10}	0.6 lb/hr
$PM_{2.5}$	0.6 lb/hr
Sulfur Dioxide	5.4 lb/hr

* Emission concentration limits for NO_x, CO, and VOC are applicable in Normal Load (maximum power rating of the turbine at ≥ 0° F). The emission rates in other operating modes, including Low Temperature mode from < 0° F to -20° F, Low Load operation (<50%), and Startup/Shutdown periods, are listed in Attachment A.

The permittee shall record the duration of each operational mode in order to calculate emissions, and shall operate the facility so as to minimize the frequency and duration of startup and shutdown events. Compliance with these emission limits may be determined as stated in Conditions 2, 3, 7, 8, 9, 25, and 27.
(9 VAC 5-80-1180 and 9 VAC 5-50-260)

16. **Annual Emissions Limits (E04 and E05)** – Annual emissions from the combined operation of the turbines (E04 and E05) shall not exceed the limits specified below:

Nitrogen Oxides (as NO_2)	43.8 tons/yr
Carbon Monoxide	91.9 tons/yr
Volatile Organic Compounds	5.5 tons/yr
PM (filterable)	1.5 tons/yr
PM_{10}	5.3 tons/yr
$PM_{2.5}$	5.3 tons/yr
Sulfur Dioxide	0.6 tons/yr

Annual emissions shall be calculated monthly as the sum of each consecutive 12-month period. Annual emissions shall include Normal Load and other operational modes (e.g. Low Temperature mode from < 0° F to -20° F, Low Load operation (<50%), and

Startup/Shutdown periods). Exceedance of the operating limits may be considered credible evidence of the exceedance of emission limits. Compliance with these emission limits may be determined as stated in Conditions 2, 3, 7, 8, 9, and 22.
(9 VAC 5-20-260, 9 VAC 5-50-410, and 9 VAC 5-80-1180)

17. **Short-Term Emission Limits (E06)** – Short-term emissions from the normal operation of the turbine (E06) shall not exceed the limits specified below:

Nitrogen Oxides (as NO_2)*	15 ppmvd @ 15% O_2 7.6 lb/hr
Carbon Monoxide*	25 ppmvd @ 15% O_2 7.7 lb/hr
Volatile Organic Compounds*	5 ppmvd @ 15% O_2 0.9 lb/hr
PM(filterable)	0.3 lb/hr
PM_{10}	0.9 lb/hr
$PM_{2.5}$	0.9 lb/hr
Sulfur Dioxide	8.0 lb/hr

* Emission concentration limits for NO_x, CO, and VOC are applicable in Normal Load (maximum power rating of the turbine at ≥ 0° F). The emission rates in other operating modes, including Low Temperature mode from < 0° F to -20° F, Low Load operation (<50%), and Startup/Shutdown periods, are listed in Attachment A.

The permittee shall record the duration of each operational mode in order to calculate emissions, and shall operate the facility so as to minimize the frequency and duration of startup and shutdown events. Compliance with these emission limits may be determined as stated in Conditions 2, 3, 7, 8, 9, 25, and 27.
(9 VAC 5-80-1180 and 9 VAC 5-50-260)

18. **Annual Emissions Limits (E06)** – Annual emissions from the operation of the turbine (E06) shall not exceed the limits specified below:

Nitrogen Oxides (as NO_2)	32.0 tons/yr
Carbon Monoxide	67.7 tons/yr
Volatile Organic Compounds	4.1 tons/yr

PM (filterable)	1.1 tons/yr
PM_{10}	3.8 tons/yr
$PM_{2.5}$	3.8 tons/yr
Sulfur Dioxide	0.42 tons/yr

Annual emissions shall be calculated monthly as the sum of each consecutive 12-month period. Annual emissions shall include Normal Load and other operational modes (e.g. Low Temperature mode from < 0° F to -20° F, Low Load operation (<50%), and Startup/Shutdown periods). Exceedance of the operating limits may be considered credible evidence of the exceedance of emission limits. Compliance with these emission limits may be determined as stated in Conditions 2, 3, 7, 8, 9, and 22.
(9 VAC 5-20-260, 9 VAC 5-50-410, and 9 VAC 5-80-1180)

19. **Emissions Limits (G3)** – Emissions from the operation of the emergency generator (G3) shall not exceed the limits specified below:

NOx (as NO_2)	3.9 lb/hr	1.0 ton/yr
CO	7.8 lb/hr	1.9 tons/yr
VOC	1.9 lb/hr	0.5 ton/yr

Annual emissions shall be calculated monthly as the sum of each consecutive 12-month period. Compliance with these emission limits may be determined as stated in Conditions 6, 7, and 10.
(9 VAC 5-80-1180 and 9 VAC 5-50-260)

20. **Requirements by Reference** – Except where this permit is more restrictive than the applicable requirement, the NSPS equipment as described in the Introduction shall be operated in compliance with the requirements of 40 CFR 60 (Subpart KKKK).
(9 VAC 5-80-1180 and 9 VAC 5-50-410)

21. **Visible Emission Limit (E03, E04, E05, and E06)** – Visible emissions from the turbines (E03, E04, E05, and E06) shall not exceed 10 percent opacity as determined by 40 CFR 60, Appendix A, Method 9. This condition applies at all times except during startup, shutdown, and malfunction.
(9 VAC 5-50-80 and 9 VAC 5-80-1180)

22. **Process Restriction (E04, E05, and E06)** – Turbines E04 and E05 shall be limited to a combined 400 startup and 400 shutdown events per year. Turbine E06 shall be limited to 200 startup and 200 shutdown events per year, calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be

demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.
(9 VAC 5-80-1180)

23. **Process Restriction (E03)** – The turbine (E03) shall be limited to 156 startup and 156 shutdown events per year, calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.
(9 VAC 5-80-1180)

24. **Emergency Generator (G3) Operation**– The operation of the emergency generator (G3) is limited to emergency situations. Emergency situations include emergency generator use to produce power for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local utility (or the normal power source, if the facility runs on its own power production) is interrupted. The emergency generator (G3) may be operated for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by federal, state, or local government, the manufacturer, the vendor, or the insurance company associated with the engine.
(9 VAC 5-80-1180 D and 9 VAC 5-50-260)

INITIAL COMPLIANCE DETERMINATION

25. **Initial Performance Test – NOx (E03, E04, E05, and E06)** - An initial annual performance test for NO_x shall be performed on each of the turbines (E03, E04, E05, and E06) in accordance with the requirements of 40 CFR 60, Subpart KKKK (40 CFR 60.4300 – 60.4420) to determine compliance with the emission limits contained in Conditions 13 (E03), Condition 15 (E04 and E05), and Condition 17 (E06). The tests shall be performed, reported and demonstrate compliance within 60 days after achieving the maximum production rate at which the turbines (E03, E04, E05, and E06) will be operated, but in no event later than 180 days after initial start-up of the permitted turbines (E03, E04, E05, and E06). One copy of the test results shall be submitted to the DEQ within 60 days after completion of the testing and shall conform to the test report format enclosed with this permit. The permittee shall submit a test protocol at least 30 days prior to testing.
(9 VAC 5-80-1180, 9 VAC 5-50-30, 9 VAC 5-80-1200, and 9 VAC 5-50-410)

26. **Visible Emissions Evaluation (E03, E04, E05, and E06)** - Concurrently with the initial performance test, Visible Emission Evaluations (VEE) in accordance with 40 CFR Part 60, Appendix A, Method 22, shall be conducted by the permittee on the stack of one of the turbines (E03, E04, E05, and E06) to verify that there are no visible emissions from the operation. The details of the test are to be arranged with the DEQ. The permittee shall submit a test protocol at least 30 days prior to testing. The evaluation shall be performed, reported, and demonstrate compliance within 60 days after achieving the maximum production rate at which the turbines (E03, E04, E05, and E06) will be operated but in no event later than 180 days after start-up of the permitted turbines (E03, E04, E05, and E06). If visible emissions are observed during the VEE using the Method 22, the permittee shall conduct a VEE in accordance with 40 CFR Part 60, Appendix A, Method 9. The test shall

consist of 10 sets of 24 consecutive observations (at 15 second intervals) to yield a six-minute average. The details of the test are to be arranged with the DEQ.

Should conditions prevent concurrent opacity observations, the DEQ shall be notified in writing, within seven days, and visible emissions testing shall be rescheduled within 30 days. Rescheduled testing shall be conducted under the same conditions (as possible) as the initial performance tests. One copy of the test result shall be submitted to the DEQ within 60 days after test completion and shall conform to the test report format enclosed with this permit. (9 VAC 5-50-30 and 9 VAC 5-80-1200)

CONTINUING COMPLIANCE DETERMINATION

27. **NO_x Performance Test (E03, E04, E05, and E06)** – NOx performance tests shall be conducted on an annual basis (no more than 14 calendar months following the previous performance test) on the turbines (E03, E04, E05, and E06) in accordance with the requirements of 40 CFR 60.4400 to determine compliance with the emission limits contained in Condition 13 (E03), Condition 15 (E04 and E05), and Condition 17 (E06). If the NO_x emission result from the performance test is less than or equal to 75 percent of the NO_x emission limit for the turbine, the permittee may reduce the frequency of subsequent performance tests to once every 2 years (no more than 26 calendar months following the previous performance test). If the results of any subsequent performance test exceed 75 percent of the NO_x emission limit for the turbine, the permittee must resume annual performance tests. The details of the tests shall be arranged with the DEQ.
(9 VAC 5-80-1200, 9 VAC 5-50-30, and 9 VAC 5-50-410)

28. **Visible Emission Evaluation** - Upon request by the DEQ, the permittee shall conduct Visible Emission Evaluations (VEE) from the four turbines (E03, E04, E05, and E06) to demonstrate compliance with the visible emission limits contained in this permit. The details of the tests shall be arranged with the DEQ.
(9 VAC 5-80-1200 and 9 VAC 5-50-30 G)

RECORDS AND REPORTING

29. **On Site Records** - The permittee shall maintain records of emissions data and operating parameters as necessary to demonstrate compliance with this permit. The content and format of such records shall be arranged with the DEQ. These records shall include, but are not limited to:

    a. Fuel analysis records or supplier certifications sufficient to demonstrate compliance with Conditions 7 through 9.

    b. Annual hours of operation for the emergency generator (G3), calculated monthly as required by Condition 10.

    c. Records to document compliance with applicable emission limits of 40 CFR 60 Subpart KKKK, as required by Condition 12.

d. Annual emissions calculations for the turbine (E03), calculated monthly as required by Condition 14.

e. Annual emissions calculations for the turbines (E04 and E05), calculated monthly as required by Condition 16.

f. Annual emissions calculations for the turbine (E06), calculated monthly as required by Condition 18.

g. Annual emissions calculations for the emergency generator (G3), calculated monthly as required by Condition 19.

h. Date, time, and the hours of duration for each turbine's (E03, E04, E05, and E06) operational modes, as follows: Normal Load @ $\geq$ 0 °F, Low Temperature mode from < 0° F to -20° F, and Low Load operation (< 50%) periods.

i. Annual count of start-up and shutdown events for each of the turbines (E04, E05 and E06), calculated monthly as required by Condition 22.

j. Annual count of start-up and shutdown events for the turbine (E03), calculated monthly as required by Condition 23.

k. Results of all performance tests and visible emission evaluations.

l. Records of malfunctions as required in Condition 63.

m. Written operating procedures, scheduled and unscheduled maintenance and training records, as required by Condition 5 and 66.

These records shall be available for inspection by the DEQ and shall be current for the most recent five years.
(9 VAC 5-50-50, 9 VAC 5-80-1180, and 9 VAC 5-50-410)

30. **Reports** – The permittee shall submit a written report of the results of each annual performance test performed in accordance with 40 CFR 60.4340(a) to the DEQ by the 60th day following the completion of the performance test. One copy of the report shall be submitted to the U.S. Environmental Protection Agency at the address specified below:

Associate Director
Office of Air Enforcement (3AP20)
U.S. Environmental Protection Agency
Region III
1650 Arch Street
Philadelphia, PA 19103-2029

(9 VAC 5-50-30, 9 VAC 5-50-50, and 40 CFR 60.4375(b))

STATE-ONLY ENFORCEABLE REQUIREMENTS

Conditions 31 - 33 are included pursuant to 9 VAC 5-80-1120 F, and are not required under the federal Clean Air Act or under any of its applicable federal requirements. These Conditions are only enforceable by the Commonwealth of Virginia State Air Pollution Control Board and its designees.

31. **Emission Controls (Formaldehyde)** – Formaldehyde emissions from the turbines (E03, E04, E05, and E06) shall be controlled by good combustion practices, operator training, and maintenance.
(9 VAC 5-80-1180 and 9 VAC 5-60-320)

32. **Emission Limits (Formaldehyde)** – Formaldehyde emissions from the operation of the turbines (E03, E04, E05, and E06) shall not exceed the limits specified below.

Formaldehyde (50-00-0):	0.36 lb/hr	1.48 tons/yr

The hourly emissions are combined emissions during normal load at ambient temperatures of 0 °F and greater. Annual emissions shall be calculated monthly as the sum of each consecutive 12-month period. These emissions are derived from the estimated overall emission contribution from operating limits. Exceedance of the operating limits shall be considered credible evidence of the exceedance of emission limits. Compliance with these emission limits may be determined as stated in Condition 31.
(9 VAC 5-80-1120F and 9 VAC 5-60-320)

33. **On-Site Records –** The permittee shall maintain records of emission data and operating parameters as necessary to demonstrate compliance with this permit. The content and format of such records shall be arranged with the DEQ. These records shall include, but are not limited to:

    a. Annual emissions of formaldehyde from the turbines (E03, E04, E05, and E06) calculated monthly as the sum of each consecutive 12-month period, as required by Condition 32.

    These records shall be available for inspection by the DEQ and shall be current for the most recent five years.
    (9 VAC 5-80-1120 F and 9 VAC 5-60-50)

PROCESS REQUIREMENTS – Turbines E01, E02, and E03 (Pre-modification)

Conditions 34 through 59 are applicable until the two existing turbines (E01 and E02) are permanently shut down and the existing turbine (E03) undergoes modification for uprating.

34. **Requirements by Reference (E01 and E02)** – Except where this permit is more restrictive than the applicable requirement, the turbines (E01 and E02), as described in the Introduction, shall be operated in compliance with the requirements of 40 CFR 60 (Subpart GG).
(9 VAC 5-80-1180, 9 VAC 5-50-400 and 9 VAC 5-50-410)

35. **Emission Unit Shutdown** – Emission unit shutdown of the pre-modification equipment shall proceed as follows:

    a. E01 shall not operate at the same time as E04, and E02 shall not operate at the same time as E05.

    b. After E04 has completed its shakedown period (not to exceed 180 days after startup of E04), E01 shall be permanently shut down.

    c. After E05 has completed its shakedown period (not to exceed 180 days after startup of E05), E02 shall be permanently shut down.

    Reactivation of the existing turbines (E01 and E02) following the shakedown periods for the new units (E04 and E05) may require a permit.
    (9 VAC 5-80-1180)

36. **Emissions Control (E03)** – Nitrogen Oxide (NO_x) emissions from the turbine (E03) shall be controlled by dry low NOx ($SoLoNO_x$) combustion control technology. The turbine shall be provided with adequate access for inspection. The SoLoNOx technology shall be in operation when the turbine is operating in normal operating mode (above 0 °F and greater than 50% load).
    (9 VAC 5-80-1180 and 9 VAC 5-50-260)

37. **Emissions Control (E03)** – PM_{10} and $PM_{2.5}$ emissions from the turbine (E03) shall be controlled through the use of natural gas.
    (9 VAC 5-80-1180 and 9 VAC 5-50-260)

38. **Emissions Controls (E01 and E02)** – Nitrogen Oxide (NO_x) emissions from the two turbines E01 and E02 shall be controlled by dry combustion control (without water/steam injection) with a lean fuel-to-air ratio. The turbines shall be provided with adequate access for inspection.
    (9 VAC 5-80-1180 and 9 VAC 5-50-260)

39. **Emissions Controls (G2)** – NO_x, PM_{10}, and $PM_{2.5}$ emissions from the emergency generator engine (G2) shall be controlled by proper engine operation in accordance with manufacturer written instructions or procedures developed by the permittee that are approved by the manufacturer, over the entire life of the engine. In addition, the permittee may only change those settings that are approved by the manufacturer in a manner consistent with good air pollution control practices for minimizing emissions.
    (9 VAC 5-80-1180 and 9 VAC 5-50-260)

OPERATING/EMISSION LIMITATIONS

40. **Fuel** – The approved fuel for the three turbines (E01, E02, and E03), emergency generators (G1 and G2), air compressor (AC1), boiler (BL1), and heaters (H1 and SH1) is natural gas. A change in the fuel may require a permit to modify and operate.
    (9 VAC 5-80-1180 and 9 VAC 5-50-260)

41. **Fuel Monitoring** – The permittee shall use the fuel quality characteristics in a current, valid purchase contract, tariff sheet or transportation contract for the fuel, specifying that the maximum total sulfur content for the natural gas being fired at the natural gas compressor station facility is 20 grains of sulfur or less per 100 standard cubic feet, and has potential sulfur emissions of less than 0.060 lb SO_2/MMBtu heat input. A standard cubic foot is defined as a cubic foot of gas at standard conditions as specified in 40 CFR 72.2 (68° F and 29.92 inches Hg).
(9 VAC 5-80-1180, 9 VAC 5-50-410, 40 CFR 60.331(u), 40 CFR 60.334(h)(3)(i) and 40 CFR 60.4365(a))

42. **Operating Hours (G2)** – The emergency generator engine (G2) shall not operate more than 500 hours per year, calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.
(9 VAC 5-80-1180 and 9 VAC 5-50-260)

43. **Monitoring Device (G2)** – The emergency generator engine (G2) shall be equipped with a non-resettable hour meter to continuously measure hours of operation. The monitoring device shall be installed, maintained, calibrated and operated in accordance with approved procedures which shall include, as a minimum, the manufacturer's written requirements or recommendations. The monitoring device shall be provided with adequate access for inspection and shall be in operation when the emergency generator engine (G2) is operating.
(9 VAC 5-80-1180)

44. **Emissions Limits (E01 and E02)** – Emissions from the operation of each of the turbines (E01 and E02) shall not exceed the limits specified below:

PM/PM_{10}	0.6 lb/hr	2.2 tons/yr
Nitrogen Oxides (as NO_2)	35 ppmvd at 15% O_2 12.6 lb/hr	42.9 tons/yr
Sulfur Dioxide	0.6 lb/hr	1.9 tons/yr
Carbon Monoxide	11.0 lb/hr	37.2 tons/yr
Volatile Organic Compounds	1.7 lb/hr	5.9 tons/yr

Annual emissions shall be calculated monthly as the sum of each consecutive 12-month period. Exceedance of the operating limits may be considered credible evidence of the exceedance of emission limits. Compliance with these emission limits may be determined as stated in Conditions 38, 40, and 41.
(9 VAC 5-80-1180 and 9 VAC 5-50-260)

45. **Short-Term Emission Limits (E03)** – Short-term emissions from the operation of the turbine (E03) shall not exceed the limits specified below:

Nitrogen Oxides (as NO_2)*	15 ppmvd @ 15% O_2 8.6 lb/hr
Carbon Monoxide*	25 ppmvd @ 15% O_2 8.8 lb/hr
Volatile Organic Compounds*	5 ppmvd @ 15% O_2 1.0 lb/hr
PM(filterable)	0.3 lb/hr
PM_{10}	2.9 lb/hr
$PM_{2.5}$	2.9 lb/hr
Sulfur Dioxide	9.1 lb/hr

* Emission limits for NO_x, CO, and VOC are applicable in Normal Load (maximum power rating of the turbine at ≥ 0° F). The emission rates in other operating modes, including Low Temperature mode from < 0° F to -20° F, Very Low Temperature mode at < -20° F, Low Load operation, and Startup/Shutdown periods, are listed in Attachment B.

The permittee shall record the duration of each operational mode in order to calculate emissions, and shall operate the facility so as to minimize the frequency and duration of startup and shutdown events. Compliance with these emission limits may be determined as stated in Conditions 36, 40, 41, and 54.
(9 VAC 5-80-1180 and 9 VAC 5-50-260)

46. **Annual Emissions Limits (E03)** – Annual emissions from the operation of the turbine (E03) shall not exceed the limits specified below:

Nitrogen Oxides (as NO_2)	37.1 tons/yr
Carbon Monoxide	83.9 tons/yr
Volatile Organic Compounds	4.7 tons/yr
PM (filterable)	1.3 tons/yr
PM_{10}	12.2 tons/yr
$PM_{2.5}$	12.2 tons/yr
Sulfur Dioxide	3.8 tons/yr

Annual emissions shall be calculated monthly as the sum of each consecutive 12-month period. Annual emissions shall include Normal Load and other operational modes (e.g. Low Temperature mode from < 0° F to -20° F, Very Low Temperature mode at < -20° F, Low Load operation, and Startup/Shutdown periods). Exceedance of the operating limits may be considered credible evidence of the exceedance of emission limits. Compliance with these emission limits may be determined as stated in Conditions 36, 37, 41, and 45.
(9 VAC 5-20-260, 9 VAC 5-50-410, and 9 VAC 5-80-1180)

47. **Emissions Limits (G2)** – Emissions from the operation of the emergency generator (G2) shall not exceed the limits specified below:

Nitrogen Oxides (as NO_2)	2.6 lb/hr	0.6 tons/yr

Compliance with these emission limits may be determined as stated in Conditions 39 and 40.
(9 VAC 5-80-1180 and 9 VAC 5-50-260)

48. **Requirements by Reference (E01 and E02)** – Except where this permit is more restrictive than the applicable requirement, the turbines (E01 and E02), as described in the Introduction, shall be operated in compliance with the requirements of 40 CFR 60 (Subpart GG).
(9 VAC 5-80-1180, 9 VAC 5-50-400 and 9 VAC 5-50-410)

49. **Visible Emission Limit (E01, E02, and E03)** – Visible emissions from the turbines (E01, E02, and E03) shall not exceed 10 percent opacity as determined by 40 CFR 60, Appendix A, Method 9. This condition applies at all times except during startup, shutdown, and malfunction.
(9 VAC 5-50-80 and 9 VAC 5-80-1180)

50. **Emergency Generator (G2) Operation**– The operation of the emergency generator (G2) is limited to emergency situations. Emergency situations include emergency generator use to produce power for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local utility (or the normal power source, if the facility runs on its own power production) is interrupted. The emergency generator (G2) may be operated for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by federal, state, or local government, the manufacturer, the vendor, or the insurance company associated with the engine.
(9 VAC 5-80-1180 D and 9 VAC 5-50-260)

51. **Process Restriction** – The turbines (E01 and E02) may not operate when the turbine (E03) is in operation, except for readiness testing and maintenance activities, as indicated in Condition 52.
(9 VAC 5-80-1180 D)

52. **Operating Hours (E01 and E02)** – When E03 is in operation, the turbines (E01 and E02) shall not operate more than 100 hours per year each for readiness testing and maintenance activities, calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for

the most recently completed calendar month to the individual monthly totals for the preceding 11 months.
(9 VAC 5-80-1180 D)

CONTINUING COMPLIANCE DETERMINATION

53. **NO_x Performance Test (E01 and E02)** - Upon request by the DEQ, the permittee shall conduct additional performance tests for NOx from each of the two turbines (E01 and E02) to demonstrate compliance with the emission limits contained in Condition 44. The details of the tests shall be arranged with the DEQ.
(9 VAC 5-80-1200, 9 VAC 5-50-30(G), and 9 VAC 5-50-410)

54. **NO_x Performance Test (E03)** – NOx performance tests shall be conducted on an annual basis (no more than 14 calendar months following the previous performance test) on the turbine (E03) in accordance with the requirements of 40 CFR 60.4400 to determine compliance with the emission limit contained in Condition 45. If the NOx emission result from the performance test is less than or equal to 75 percent of the NOx emission limit for the turbine, the permittee may reduce the frequency of subsequent performance tests to once every 2 years (no more than 26 calendar months following the previous performance test). If the results of any subsequent performance test exceed 75 percent of the NO_X emission limit for the turbine, the permittee must resume annual performance tests. The details of the tests shall be arranged with the DEQ.
(9 VAC 5-80-1200, 9 VAC 5-50-30, and 9 VAC 5-50-410)

55. **Visible Emission Evaluation** - Upon request by the DEQ, the permittee shall conduct additional Visible Emission Evaluations (VEE) from the three turbines (E01, E02 and E03) to demonstrate compliance with the visible emission limits contained in this permit. The details of the tests shall be arranged with the DEQ.
(9 VAC 5-80-1200 and 9 VAC 5-50-30 G)

RECORDS AND REPORTING

56. **On Site Records** - The permittee shall maintain records of emission data and operating parameters as necessary to demonstrate compliance with this permit. The content and format of such records shall be arranged with the DEQ. These records shall include, but are not limited to:

    a. A current, valid purchase contract, tariff sheet or transportation contract for the fuel, specifying that the maximum total sulfur content for the natural gas being fired at the natural gas compressor station facility is 0.068 percent by weight or less (i.e. less or equal to 20 grains per 100 standard cubic feet), as required by Condition 41.

    b. Annual emissions calculations for each turbine (E01 and E02), calculated monthly as required by Condition 44.

    c. Annual emissions calculations for the turbine (E03), calculated monthly as required by Condition 46.

d. Date, time, and the hours of duration for each of the turbine (E03) operational modes to include the Normal Load @ ≥ 0 °F, Low Temperature mode from < 0° F to -20° F , Very Low Temperature mode at < -20° F, Low Load operation, and Startup/Shutdown periods.

e. Annual hours of operation for readiness and maintenance activities from each of the turbines (E01 and E02), calculated monthly as required by Condition 52.

f. Annual hours of operation for the emergency generator (G2), calculated monthly as required by Condition 42.

g. Results of all performance tests and visible emission evaluations.

h. Records of malfunctions, as required in Condition 63.

i. Written operating procedures, scheduled and unscheduled maintenance and training records, as required by Conditions 5 and 66.

These records shall be available for inspection by the DEQ and shall be current for the most recent five years.
(9 VAC 5-50-50, 9 VAC 5-80-1180 and 9 VAC 5-50-410)

STATE-ONLY ENFORCEABLE REQUIREMENTS

Conditions 57 - 59 are included pursuant to 9 VAC 5-80-1120 F, and are not required under the federal Clean Air Act or under any of its applicable federal requirements. These Conditions are only enforceable by the Commonwealth of Virginia State Air Pollution Control Board and its designees.

57. **Emission Controls (Formaldehyde)** – Formaldehyde emissions from the turbines (E01, E02 and E03) shall be controlled by good combustion practices, operator training, and maintenance.
(9 VAC 5-80-1180 and 9 VAC 5-60-320)

58. **Emission Limits (Formaldehyde)** – Formaldehyde emissions from the operation of the turbines (E01, E02 and E03) shall not exceed the limits specified below.

Formaldehyde (50-00-00):	0.86 lb/hr	2.6 tons/yr

Annual emissions shall be calculated monthly as the sum of each consecutive 12-month period. These emissions are derived from the estimated overall emission contribution from operating limits. Exceedance of the operating limits shall be considered credible evidence of the exceedance of emission limits. Compliance with these emission limits may be determined as stated in Conditions 51 and 57.
(9 VAC 5-80-1120F and 9 VAC 5-60-320)

59. **On-Site Records –** The permittee shall maintain records of emission data and operating parameters as necessary to demonstrate compliance with this permit. The content and format of such records shall be arranged with the DEQ. These records shall include, but are not limited to annual emissions of formaldehyde from the turbines (E01, E02 and E03), calculated monthly as the sum of each consecutive 12-month period, as required by Condition 58

    These records shall be available for inspection by the DEQ and shall be current for the most recent five years.
    (9 VAC 5-80-1120 F and 9 VAC 5-60-50)

NOTIFICATIONS

60. **Initial Notifications** – The permittee shall furnish written notification to the DEQ of:

    a. The actual date on which modification of the natural gas compressor station commenced within 30 days after such date;

    b. The actual start-up date of the turbines (E03, E04, E05, and E06) and emergency generator (G3) within 15 days after such date;

    c. The actual date on which the turbines (E01 and E02) are shutdown, within 30 days after such date; and

    d. The anticipated date of performance tests required by this permit or requested by the DEQ. The notification shall be postmarked not less than 30 days prior to such date.

    A copy of the required notifications in a, b, c and d shall also be sent to the EPA at the address listed in Condition 30.

    (9 VAC 5-50-50 and 9 VAC 5-80-1180)

GENERAL CONDITIONS

61. **Permit Invalidation –** The portion of this permit to modify and operate the natural gas compressor station shall become invalid, unless an extension is granted by the DEQ, if:
    a. A program of continuous construction is not commenced within 18 months from the date of this permit.

    b. A program of construction is discontinued for a period of 18 months or more, or is not completed within a reasonable time, except for a DEQ-approved period between phases of a phased construction project.

    (9 VAC 5-80-1210)

62. **Right of Entry –** The permittee shall allow authorized local, state, and federal representatives, upon the presentation of credentials:

a. To enter upon the permittee's premises on which the facility is located or in which any records are required to be kept under the terms and conditions of this permit;

b. To have access to and copy at reasonable times any records required to be kept under the terms and conditions of this permit or the State Air Pollution Control Board Regulations;

c. To inspect at reasonable times and any facility, equipment, or process subject to the terms and conditions of this permit or the State Air Pollution Control Board Regulations; and

d. To sample or test at reasonable times.

For purposes of this condition, the time for inspection shall be deemed reasonable during regular business hours or whenever the facility is in operation. Nothing contained herein shall make an inspection time unreasonable during an emergency.
(9 VAC 5-170-130 and 9 VAC 5-80-1180)

63. **Record of Malfunctions** – The permittee shall maintain records of the occurrence and duration of any bypass, malfunction, shutdown or failure of the facility or its associated air pollution control equipment that results in excess emissions for more than one hour. Records shall include the date, time, duration, description (emission unit, pollutant affected, cause), corrective action, preventive measures taken and name of person generating the record.
(9 VAC 5-20-180 J and 9 VAC 5-80-1180 D)

64. **Notification for Facility or Control Equipment Malfunction** – The permittee shall furnish notification to the DEQ of malfunctions of the affected facility or related air pollution control equipment that may cause excess emissions for more than one hour, by facsimile transmission, telephone or telegraph. Such notification shall be made as soon as practicable but not later than four daytime business hours after the malfunction is discovered. The permittee shall provide a written statement giving all pertinent facts, including the estimated duration of the breakdown, within two weeks of discovery of the malfunction. When the condition causing the failure or malfunction has been corrected and the equipment is again in operation, the permittee shall notify the DEQ.
(9 VAC 5-20-180 C and 9 VAC 5-80-1180)

65. **Violation of Ambient Air Quality Standard** - The permittee shall, upon request of the DEQ, reduce the level of operation or shut down a facility, as necessary to avoid violating any primary ambient air quality standard and shall not return to normal operation until such time as the ambient air quality standard will not be violated.
(9 VAC 5-20-180 I and 9 VAC 5-80-1180)

66. **Maintenance/Operating Procedures** – At all times, including periods of start-up, shutdown, and malfunction, the permittee shall, to the extent practicable, maintain and operate the affected source, including associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions:

The permittee shall take the following measures in order to minimize the duration and frequency of excess emissions, with respect to the facility's air pollution control equipment and process equipment which affects such emissions:

a. Develop a maintenance schedule and maintain records of all scheduled and non-scheduled maintenance.

b. Maintain an inventory of spare parts.

c. Have available written operating procedures for equipment. These procedures shall be based on the manufacturer's recommendations, at a minimum.

d. Train operators in the proper operation of all such equipment and familiarize the operators with the written operating procedures. The permittee shall maintain records of the training provided including the names of trainees, the date of training and the nature of the training.

(9 VAC 5-50-20 E and 9 VAC 5-80-1180 D)

67. **Permit Suspension/Revocation** - This permit may be suspended or revoked if the permittee:

a. Knowingly makes material misstatements in the application for this permit or any amendments to it;

b. Fails to comply with the conditions of this permit;

c. Fails to comply with any emission standards applicable to a permitted emissions unit;

d. Causes emissions from the stationary source which result in violations of, or interferes with the attainment and maintenance of, any ambient air quality standard; or

e. Fails to operate this facility in conformance with any applicable control strategy, including any emission standards or emission limitations, in the State Implementation Plan in effect on the date that the application for this permit is submitted.

(9 VAC 5-80-1210 F)

68. **Change of Ownership** - In the case of a transfer of ownership of a stationary source, the new owner shall abide by any current permit issued to the previous owner. The new owner shall notify the DEQ of the change of ownership within 30 days of the transfer.
(9 VAC 5-80-1240)

69. **Permit Copy** - The permittee shall keep a copy of this permit on the premises of the facility to which it applies.
(9 VAC 5-80-1180)

Turbines' (E03, E04, E05, and E06) Short-Term Emission Limits in Non-Standard Operating Modes

Turbine (E03) Short-Term Emission Limits in Non-Standard Operating Modes[1]

Operational Mode	Pollutant Emission Rate (lb/hr)		
	NO_x	CO	VOC
Low Temperature (< 0 to -20 °F)	24.19	35.05	2.00
Low Load Operation (< 50%)	20.97	850.77	9.72
Start-up / Shutdown (lb/event)[2]	4.3	384.5	4.4

[1] – Non-standard operating mode is any mode in which the turbine (E03) may operate other than Normal Load.
[2] – The emissions from one event are equal to the sum of the emissions from one start-up and one shutdown.

Turbines (E04 and E05) Short-Term Emission Limits in Non-Standard Operating Modes[1]

Operational Mode	Pollutant Emission Rate (lb/hr)		
	NO_x	CO	VOC
Low Temperature (< 0 to -20 °F)	14.71	21.32	1.22
Low Load Operation (< 50%)	14.45	586.42	6.70
Start-up / Shutdown (lb/event)[2]	1.90	166.50	1.90

[1] – Non-standard operating mode is any mode in which the turbines (E04 and E05) may operate other than Normal Load.
[2] – The emissions from one event are equal to the sum of the emissions from one start-up and one shutdown.

Turbine (E06) Short-Term Emission Limits in Non-Standard Operating Modes[1]

Operational Mode	Pollutant Emission Rate (lb/hr)		
	NO_x	CO	VOC
Low Temperature (< 0 to -20 °F)	21.84	31.66	1.81
Low Load Operation (< 50%)	16.10	653.41	7.47
Start-up / Shutdown (lb/event)[2]	3.10	272.70	3.12

[1] – Non-standard operating mode is any mode in which the turbine (E06) may operate other than Normal Load.
[2] – The emissions from one event are equal to the sum of the emissions from one start-up and one shutdown.

Turbine (E03 - premodification) Short-Term Emission Limits in Non-Standard Operating Modes[1]

Operational Mode	Pollutant Emission Rate (lb/hr)		
	NO_x	CO	VOC
Low Temperature (< 0 to -20 °F)	24.19	35.05	2.00
Very Low Temperature (<-20 °F)	69.10	52.58	2.00
Low Load Operation (< 50%)	20.97	850.77	9.72
Start-up / Shutdown (lb/cycle)[2]	4.3	384.5	4.4

[1] – Non-standard operating mode is any mode in which the turbine (E03) may operate other than Normal Load.

[2] – The emissions from one cycle are equal to the sum of the emissions from one start-up and one shutdown event.

SOURCE TESTING REPORT FORMAT

Report Cover

1. Plant name and location
2. Units tested at source (indicate Ref. No. used by source in permit or registration)
3. Test Dates.
4. Tester; name, address and report date

Certification

1. Signed by team leader/certified observer (include certification date)
2. Signed by responsible company official
3. *Signed by reviewer

Copy of approved test protocol

Summary

1. Reason for testing
2. Test dates
3. Identification of unit tested & the maximum rated capacity
4. *For each emission unit, a table showing:
    a. Operating rate
    b. Test Methods
    c. Pollutants tested
    d. Test results for each run and the run average
    e. Pollutant standard or limit
5. Summarized process and control equipment data for each run and the average, as required by the test protocol
6. A statement that test was conducted in accordance with the test protocol or identification & discussion of deviations, including the likely impact on results
7. Any other important information

Source Operation

1. Description of process and control devices
2. Process and control equipment flow diagram
3. Sampling port location and dimensioned cross section Attached protocol includes: sketch of stack (elevation view) showing sampling port locations, upstream and downstream flow disturbances and their distances from ports; and a sketch of stack (plan view) showing sampling ports, ducts entering the stack and stack diameter or dimensions

Test Results

1. Detailed test results for each run
2. *Sample calculations
3. *Description of collected samples, to include audits when applicable

Appendix

1. *Raw production data
2. *Raw field data
3. *Laboratory reports
4. *Chain of custody records for lab samples
5. *Calibration procedures and results
6. Project participants and titles
7. Observers' names (industry and agency)
8. Related correspondence
9. Standard procedures

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* Not applicable to visible emission evaluations